

Southern Nuclear Operating Company, Inc.
Vogtle Electric Generating Plant
Post Office Box 1600
Waynesboro, Georgia 30830
Tel 706.826.4209
Fax 706.826.3321



August 24, 1998

Docket No. 50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Ladies and Gentlemen:

**VOGTLE ELECTRIC GENERATING PLANT
REVISION TO LICENSEE EVENT REPORT 2-98-005
REACTOR TRIP AND SAFETY INJECTION
FOLLOWING CONDENSATE PUMP TRIP**

Southern Nuclear Operating Company hereby submits a revision to the Vogtle Electric Generating Plant licensee event report that was transmitted to the NRC on July 1, 1998. This revision extends the completion date for Corrective Action No. 6 which is necessary to involve offsite engineering organizations in performance of the broadness review. In addition, Corrective Actions No. 2 and No. 5 have been updated.

Please contact this office if you have any questions.

Sincerely,

A handwritten signature in dark ink, appearing to read "J. B. Beasley, Jr.", is written over the typed name.

J. B. Beasley, Jr.

JBB/BHW/gmb

Enclosure: LER 2-98-005, Revision 1

xc: Southern Nuclear Operating Company
Mr. J. T. Gasser
Mr. M. Sheibani
SNC Document Management

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. D. H. Jaffe, Senior Project Manager, NRR
Mr. J. Zeiler, Senior Resident Inspector, VEGP

9808280257 980824
PDR ADOCK 05000425
S PDR

JE22/1

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REQUIRED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Vogtle Electric Generating Plant - Unit 2

DOCKET NUMBER (2)

05000425

PAGE (3)

1 OF 4

TITLE (4)

REACTOR TRIP AND SAFETY INJECTION FOLLOWING CONDENSATE PUMP TRIP

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER(S)
06	09	98	98	005	01	08	21	98		05000425
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR *: (Check one or more) (11)										
OPERATING MODE (9)		1		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(vii)
POWER LEVEL (10)		100		20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
				20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
				20.2203(a)(2)(ii)		20.2203(c)(1)		X 50.73(a)(2)(iv)		OTHER
				20.2203(a)(2)(iii)		50.38(c)(1)		50.73(a)(2)(v)		Specify in Abstract below
				20.2203(a)(2)(iv)		50.38(c)(2)		50.73(a)(2)(vii)		or in NRC Form 386A

LICENSEE CONTACT FOR THIS LER (12)

NAME

Mehdi Sheihani Nuclear Safety and Compliance

TELEPHONE NUMBER (include area code)

AREA CODE

706 826-3209

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	E	A	C	A	P	W	1	2	0	N

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)

X NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)

On June 9, 1998, at 0857 EDT, the 2C condensate pump failed, the main generator tripped and a turbine/reactor trip occurred. Non-1E busses did not transfer to offsite power, leaving motor operated moisture separator reheater (MSR) steam supply valves fully opened, drawing approximately 1 million lbs/hr of steam. This, and other factors, led to a rapid reactor coolant system (RCS) cooldown and drop in pressure. Control room operators manually isolated main steamlines to limit the RCS cooldown rate. However, an automatic safety injection (SI) occurred at 0900 EDT, due to low pressurizer pressure. Operators responded properly to the SI, restored power to the appropriate non-1E busses, and stabilized the unit in mode 3 (hot standby).

The direct causes of this event were an electrical fault in the surge capacitor of the 2C condensate pump motor, along with the tripping of its associated 13.8 kV bus on overcurrent. Due to improper breaker relay tap settings, the breaker tripping scheme tripped the generator output breakers to clear the fault in such a manner that transfer from onsite to offsite busses was prevented. This led to both the turbine/reactor trip and the open condition of the MSR steam supply valves. The root cause of this event was inadequate design documentation that resulted in personnel incorrectly setting the relay taps. This is believed to have occurred during original plant startup. Relay tap settings for the breaker relays were corrected. The 2C condensate pump was removed from service for repairs and the unit was returned to power.

9808280260 980824
PDR ADCK 05000425
S PDR

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Vogtle Electric Generating Plant - Unit 2	0 5 0 0 0 4 2 5	9 8	0 0 5	0 1	2	OF	4

TEXT (If more space is required, use additional copies of NRC Form 368A)(17)

A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(iv) because unplanned actuations of the reactor protection system and engineered safety feature (ESF) systems occurred.

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 2 was operating in Mode 1 (power operation) at 100 percent of rated thermal power. The main turbine high vibration trip had been disabled for weekly preventive maintenance and the Train A residual heat removal (RHR) pump room cooler was removed from service to investigate high vibration. However, there was no inoperable equipment that contributed to the occurrence of this event.

C. DESCRIPTION OF EVENT

On June 9, 1998, Unit 2 was operating normally at 100 percent power. At 0857 EDT, the 2C condensate pump failed, the main generator tripped and a turbine/reactor trip occurred. The main feedwater system isolated and the auxiliary feedwater (AFW) system actuated, as designed. Non-1E busses did not transfer to offsite power. This left motor operated moisture separator reheater (MSR) steam supply valves fully opened, drawing approximately 1 million lbs/hr of steam. This, and other factors, led to a rapid reactor coolant system (RCS) cooldown and drop in pressure. Control room personnel manually isolated main steamlines to limit the RCS cooldown rate. However, an automatic safety injection (SI) occurred at 0900 EDT, due to low pressurizer pressure. A containment ventilation isolation (CVI) and a control room isolation (CRI) occurred, as designed, upon receipt of the SI signal. Operators responded properly to the SI, restored power to the appropriate non-1E busses, and stabilized the unit in mode 3 (hot standby).

D. CAUSE OF EVENT

The direct cause of this event were an electrical fault in the surge capacitor of the 2C condensate pump motor, along with the tripping of its associated 13.8 kV bus on overcurrent, due to improper breaker relay tap settings. The relay setting error caused the protective relaying scheme to sense a fault which could not be isolated, and thus resulted in opening the main generator breakers to clear the fault, initiate the turbine trip, and prevent fast bus and residual bus transfers from the onsite to the offsite busses. The bus transfer scheme is designed to prevent transferring faulted buses to the

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Vogtle Electric Generating Plant - Unit 2	0 5 0 0 0 4 2 5	9 8	0 0 5	0 1	3	OF	4

TEXT (If more space is required, use additional copies of NRC Form 368A)(17)

1E Reserve Auxiliary Transformers. Therefore, all non-1E power was lost. This caused a loss of power to the reactor coolant pumps and a variety of non-1E components, resulting in the MSR steam supply valves remaining open.

The root cause of this event was inadequate design documentation that resulted in personnel incorrectly setting the relay taps. The relay drawings did not specify the relay tap settings. It is believed the relay taps were incorrectly set during original plant startup. These improper relay tap settings led to the trip of the 13.8 kV bus and actuation of the protective relaying lockout that led to opening of the main generator breakers.

E. ANALYSIS OF EVENT

The turbine/reactor trip occurred as designed following the actuation of the protective relaying lockout. Main feedwater isolation and AFW actuation took place as expected after the reactor trip. Even though the MSIV's were closed within 3 minutes of the initiating event, the reduction in RCS pressure resulting from the cooldown properly initiated the SI, which, in turn, initiated the CVI and CRI actuations. Personnel responded properly during the transient and stabilized the unit in mode 3. During the event, PORV 2PV-455A and block valves 2HV-8000A and 2HV-8000B cycled repeatedly. As a result 2PV-455A experienced seat leakage and 2HV-8000B became inoperable; however, no safety function was lost due to these occurrences. Based on these considerations, there was no adverse affect on plant safety or on the health and safety of the public as a result of this event.

F. CORRECTIVE ACTIONS

- 1) The 2C condensate pump motor has been repaired and returned to service.
- 2) An initial review of the adequacy of pump motor surge capacitor inspection and testing requirements was completed. Further engineering evaluation will be performed by November 2, 1998, to evaluate the need for surge protection on 13.8 kV motors and to obtain additional recommendations for maintenance, testing and service life.
- 3) The relay tap settings for the 2NAB and 2NAA bus breakers were corrected.
- 4) Relay taps for the same model relay in other 4160 volt and 13.8 kV breakers were inspected and found to have the correct settings.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Vogtle Electric Generating Plant - Unit 2	0 5 0 0 0 4 2 5	9 8	0 0 5	0 1	4	OF	4

TEXT (If more space is required, use additional copies of NRC Form 388A)(17)

5) Relay drawings were corrected to show the proper relay tap settings.

6) A broadness review will be performed by December 14, 1998, to identify and document other critical relay seal-in settings.

G. ADDITIONAL INFORMATION

1) Failed Components:

Surge capacitor manufactured by Westinghouse Electric Corporation. Rating: 13.8 kV, 3-pole, 0.25 mfd per pole. Style # 1N03180A09A.

2) Previous Similar Events:

None

3) Energy Industry Identification:

Reactor Coolant System - AB
Main Feedwater System - SJ
Auxiliary Feedwater System - BA
Main Turbine System - TA
Safety Injection System - BQ
Containment Ventilation Isolation System - JM
Control Room Isolation System - VI
4160 Volt AC Power System - EA
13.8 kV Power System - EA

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9808280257	DOC.DATE: 98/08/24	NOTARIZED: NO	DOCKET #
FACIL:50-425	Alvin W. Vogtle Nuclear Plant, Unit 2, Georgia Power		05000425
AUTH.NAME	AUTHOR AFFILIATION		
BEASLEY, J.B.	Southern Nuclear Operating Co.		
RECIP.NAME	RECIPIENT AFFILIATION		
	Records Management Branch (Document Control Desk)		

SUBJECT: Forwards LER 98-005-01, extending completion date for corrective action 6 which is necessary to involve offsite engineering organizations in performance of broadness review. Corrective actions 2 & 5 have been updated.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 1
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Application for permit renewal filed.

05000425

	RECIPIENT		COPIES		RECIPIENT		COPIES	
	ID CODE/NAME		LTTR	ENCL	ID CODE/NAME		LTTR	ENCL
	PD2-2 PD		1	1	JAFFE, D		1	1
INTERNAL:	AEOD/SPD/RAB		2	2	AEOD/SPD/RRAB		1	1
	FILE CENTER		1	1	NRR/DE/ECGB		1	1
	NRR/DE/EELB		1	1	NRR/DE/EMEB		1	1
	NRR/DRCH/HICB		1	1	NRR/DRCH/HOHB		1	1
	NRR/DRCH/HQMB		1	1	NRR/DRPM/PECB		1	1
	NRR/DSSA/SPLB		1	1	RES/DET/EIB		1	1
	RGN2 FILE 01		1	1				
EXTERNAL:	L ST LOBBY WARD		1	1	LITCO BRYCE, J H		1	1
	NOAC POORE, W.		1	1	NOAC QUEENER, DS		1	1
	NRC PDR		1	1	NUDOCS FULL TXT		1	1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

FULL TEXT CONVERSION REQUIRED

TOTAL NUMBER OF COPIES REQUIRED: LTTR 22 ENCL 22